PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-233592
(43)Date of publication of application : 20.08.2002

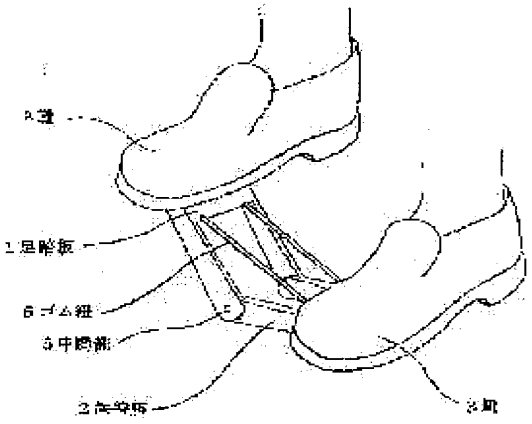
(51)Int.Cl. A63B 23/04

(21)Application number : 2001-077273
(22)Date of filing : 09.02.2001

(71)Applicant : KUSABA NUNAWA
(72)Inventor : KUSABA NUNAWA

(54) EXERCISER FOR USE IN AIRCRAFT

(57)Abstract:
PROBLEM TO BE SOLVED: To provide an exerciser for preventing thrombosis called economy class syndrome such that a passenger seated on a small seat in an aircraft for a long time during a journey collapses immediately after arrival.
SOLUTION: The exerciser for use in aircraft comprises two foot boards with their surfaces opposite to each other with an angle of about 120 degrees, the foot boards being interconnected by means of retaining arms with an interval between the boards that is about equal to the width of a shoe.



* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] It is the aircraft internal use movement implement characterized by the guide-peg step board side of two sheets on which a part of sole or sole is put maintaining the include angle of about 120 degrees, confronting each other, and each guide-peg step board vacating and connecting spacing of **** extent with a maintenance arm, establishing an inclined plane in a guide-peg step board heel, and changing.
[Claim 2] A maintenance arm is the aircraft internal use movement implement of range claim 1 publication of the application for patent characterized by dividing, fixing with pars intermedia and changing as **** being possible.
[Claim 3] It is the aircraft internal use movement implement of range claim 2 publication of the application for patent which attaches a rubber string between each guide-peg step board or a maintenance arm, and is characterized by forming and a guide-peg step board confrontation angle changing so that it may open to about 180 degrees.
[Claim 4] while fixing the both-sides edge of each guide-peg step board with a maintenance arm -- from the fixing section -- a little -- an inside location -- assistance -- a crosspiece -- an edge -- fixing -- assistance -- a crosspiece -- the claim characterized by the other end fixing and changing from the fixing section of the support plate which fixed the end to the shaft of maintenance arm pars intermedia in a little distant location -- the aircraft internal use movement implement of claim 2 publication.

---

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] this invention -- mainly -- under a travel -- the inside of an airplane -- long duration -- it is related with the movement implement used within the aircraft which prevents the so-called economy class syndrome from which the PAX sitting on the narrow seat breaks down from the pulmonary embolism immediately after arrival.
[0002]
[Description of the Prior Art] Since the humidity of the inside of a plane [aircraft / under / a flight] is as low as about 20%, it dries, moisture is easy to be lost upwards, and since opportunity internal pressure is about 80 usual percent, the flow of blood worsens. Furthermore, since the long duration seat was in the narrow seat and the circulation of the leg gets very bad, a small thrombus becomes easy to be made in a vein. Moreover, it is the same even if a long duration seat is in an automatic in the car one.
[0003]
[Problem(s) to be Solved by the Invention] If you begin to walk after landing while a thrombus had been made in the vein of the leg, a small thrombus will move in the inside of a blood vessel, a blood vessel will be plugged up within lungs, and it will become the pulmonary embolism, it poses a problem that caused dyspnea and a heart-and-lungs halt and many persons also die every year all over the world, it broadcasts or cautions are urged that an airline moves hand and foot by the inside of a plane.
[0004]
[Means for Solving the Problem] This invention tends to offer the instrument which can perform flexible movement of the muscles of a guide peg or the leg easily, carried easily, done and sat down within the aircraft so that the blood flow of the leg may not worsen even if the long duration seat was within the airplane.
[0005]
[Embodiment of the Invention] The guide-peg step board (1) side of two sheets on which a part of sole or sole is put maintained the include angle of about 120 degrees, it confronted each other, each guide-peg step board vacated and connected spacing of shoes (3) width-of-face extent with the maintenance arm (2), and the guide-peg step board heel (4) was made into the aircraft internal use movement implement by being characterized by preparing an inclined plane and changing. The product made from plastics of the quality of the material is lightweight, it is easy to use, and within the limits of 100 to 150 degrees tends to use a confrontation angle. Moreover, if a maintenance arm is divided, and is fixed with pars intermedia (5) and **** is made possible, it will be easy to carry out carrying under travel. If a rubber string (6) is attached between each guide-peg step board or a maintenance arm and the guide-peg step board is opened from a **** condition, it will open to about 100 degrees. If each guide-peg step board is strongly pushed to coincidence with shoes, it may be made for a guide-peg step board confrontation angle to open to about 180 degrees, and if a loose curve and loose pars intermedia also form the maintenance arm periphery section with a big path, it can carry out smoothly without resistance of migration of the right and left at the time of a step. Furthermore, although

a sole touches by Men, since the method of Tokikazu who puts shoes on the guide-peg step board becomes almost parallel to a floor, and another side serves as the form where the 120-degree order upper part is turned to, a sole will be touched by the line, but since a sole will be touched by Men if the inclined plane which becomes almost parallel to a sole is established in a guide-peg step board heel, shoes can depress the guide-peg step board in the condition of having been stabilized. A crosspiece (8) edge is fixed. in addition -- although an example is shown in drawing 3 , while fixing the both-sides edge (7) of the guide-peg step board with a maintenance arm -- from the fixing section -- a little -- an inside location -- assistance -- assistance -- a crosspiece -- if the other end is fixed in the location a little distant from the fixing section of the support plate (9) which fixed the end on the shaft of maintenance arm pars intermedia -- a maintenance arm and assistance -- a crosspiece serves as a link mechanism and each guide-peg step board can always maintain a floor line and parallel.

[0006]

[Effect of the Invention] If it sits on a seat within the aircraft and equips with a seat belt, will be hard coming to move, but if the guide-peg step board places this invention aircraft internal use movement implement underfoot by the extended state and a sole is put on each guide-peg step board, one guide-peg step board part will touch the floor line of the aircraft, and since the guide-peg step board of another side has turned to the slanting upper part, a sole will be appeared in an inclined plane almost parallel to the floor line of a guide-peg step board heel. Next, if the shoes of another side are depressed, the guide-peg step board which touched the floor will go up, and when the guide-peg step board of another side repeats this by turns in contact with a floor, a guide peg will repeat a step condition. Since it becomes with the form where blood is pushed up with a pump and circulation will be promoted if it is, the same movement as the time of a walk will be carried out and muscular telescopic motion also carries out several times every [several], since the muscles which put in and depress the force on foot since it will be hard to carry out a step if a movement implement is not used, but step movement can be rhythmically performed for a long time if the movement implement in this invention aircraft is used are used and a guide peg fluctuates, it is hard a thrombus becoming impossible. Moreover, the fate instrument with which ****** and a guide-peg step board confrontation angle opened a powerful rubber string or a powerful spring etc. to about 180 degrees between the guide-peg step boards has the high movement effectiveness in using the muscles of the leg further, when putting the force into both guide pegs and opening the guide-peg step board. Since the stimulus to the sole or the arch of foot will increase when it uses with bare feet in addition to a skid if the irregularity of a skid is prepared in a guide-peg step board front face, the effectiveness of recovery from fatigue or a jet lag dissolution is also acquired, and since the large guide-peg step board side is almost parallel to a sole whenever it uses the device gestalt shown in drawing 3 , it is easy to come to a standstill. In addition, this movement implement can be used like the aircraft not only by the inside of the aircraft but by an intercity bus and a truck, and can be used also in the backseat of a passenger car. Furthermore, since movement of a guide peg can be performed even while doing the long duration activity, for example toward desks, such as computer actuation, also when there is no time amount which is busy with work, housekeeping, study, etc. and exercises, it can use.

---

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

TECHNICAL FIELD

[Field of the Invention] this invention -- mainly -- under a travel -- the inside of an airplane -- long duration -- it is related with the movement implement used within the aircraft which prevents the so-called economy class syndrome from which the PAX sitting on the narrow seat breaks down from the pulmonary embolism immediately after arrival.

---

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

PRIOR ART

[Description of the Prior Art] Since the humidity of the inside of a plane [aircraft / under / a flight] is as low as about 20%, it dries, moisture is easy to be lost upwards, and since opportunity internal pressure is about 80 usual percent, the flow of blood worsens. Furthermore, since the long duration seat was in the narrow seat and the circulation of the leg gets very bad, a small thrombus becomes easy to be made in a vein. Moreover, it is the same even if a long duration seat is in an automatic in the car one.

---

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

EFFECT OF THE INVENTION

[Effect of the Invention] If it sits on a seat within the aircraft and equips with a seat belt, will be hard coming to move, but if the guide-peg step board places this invention aircraft internal use movement implement underfoot by the extended state and a sole is put on each guide-peg step board, one guide-peg step board part will touch the floor line of the aircraft, and since the guide-peg step board of another side has turned to the slanting upper part, a sole will be appeared in an inclined plane almost parallel to the floor line of a guide-peg step board heel. Next, if the shoes of another side are depressed, the guide-peg step board which touched the floor will go up, and when the guide-peg step board of another side repeats this by turns in contact with a floor, a guide peg will repeat a step condition. Since it becomes with the form where blood is pushed up with a pump and circulation will be promoted if it is, the same movement as the time of a walk will be carried out and muscular telescopic motion also carries out several times every [several], since the muscles which put in and depress the force on foot since it will be hard to carry out a step if a movement implement is not used, but step movement can be rhythmically performed for a long time if the movement implement in this invention aircraft is used are used and a guide peg fluctuates, it is hard a thrombus becoming impossible. Moreover, the fate instrument with which ****** and a guide-peg step board confrontation angle opened a powerful rubber string or a powerful spring etc. to about 180 degrees between the guide-peg step boards has the high movement effectiveness in using the muscles of the leg further, when putting the force into both guide pegs and opening the guide-peg step board. Since the stimulus to the sole or the arch of foot will increase when it uses with bare feet in addition to a skid if the irregularity of a skid is prepared in a guide-peg step board front face, the effectiveness of recovery from fatigue or a jet lag dissolution is also acquired, and since the large guide-peg step board side is almost parallel to a sole whenever it uses the device gestalt shown in drawing 3 , it is easy to come to a standstill. In addition, this movement implement can be used like the aircraft not only by the inside of the aircraft but by an intercity bus and a truck, and can be used also in the backseat of a passenger car. Furthermore, since movement of a guide peg can be performed even while doing the long duration activity, for example toward desks, such as computer actuation, also when there is no time amount which is busy with work, housekeeping, study, etc. and exercises, it can use.

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] If you begin to walk after landing while a thrombus had been made in the vein of the leg, a small thrombus will move in the inside of a blood vessel, a blood vessel will be plugged up within lungs, and it will become the pulmonary embolism, it poses a problem that caused dyspnea and a heart-and-lungs halt and many persons also die every year all over the world, it broadcasts or cautions are urged that an airline moves hand and foot by the inside of a plane.

---

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

MEANS

[Means for Solving the Problem] This invention tends to offer the instrument which can perform flexible movement of the muscles of a guide peg or the leg easily, carried easily, done and sat down within the aircraft so that the blood flow of the leg may not worsen even if the long duration seat was within the airplane.
[0005]
[Embodiment of the Invention] The guide-peg step board (1) side of two sheets on which a part of sole or sole is put maintained the include angle of about 120 degrees, it confronted each other, each guide-peg step board vacated and connected spacing of shoes (3) width-of-face extent with the maintenance arm (2), and the guide-peg step board heel (4) was made into the aircraft internal use movement implement by being characterized by preparing an inclined plane and changing. The product made from plastics of the quality of the material is lightweight, it is easy to use, and within the limits of 100 to 150 degrees tends to use a confrontation angle. Moreover, if a maintenance arm is divided, and is fixed with pars intermedia (5) and **** is made possible, it will be easy to carry out carrying under travel. If a rubber string (6) is attached between each guide-peg step board or a maintenance arm and the guide-peg step board is opened from a **** condition, it will open to about 100 degrees. If each guide-peg step board is strongly pushed to coincidence with shoes, it may be made for a guide-peg step board confrontation angle to open to about 180 degrees, and if a loose curve and loose pars intermedia also form the maintenance arm periphery section with a big path, it can carry out smoothly without resistance of migration of the right and left at the time of a step. Furthermore, although a sole touches by Men, since the method of Tokikazu who puts shoes on the guide-peg step board becomes almost parallel to a floor, and another side serves as the form where the 120-degree order upper part is turned to, a sole will be touched by the line, but since a sole will be touched by Men if the inclined plane which becomes almost parallel to a sole is established in a guide-peg step board heel, shoes can depress the guide-peg step board in the condition of having been stabilized. A crosspiece (8) edge is fixed. in addition -- although an example is shown in drawing 3 , while fixing the both-sides edge (7) of the guide-peg step board with a maintenance arm -- from the fixing section -- a little -- an inside location -- assistance -- assistance -- a crosspiece -- if the other end is fixed in the location a little distant from the fixing section of the support plate (9) which fixed the end on the shaft of maintenance arm pars intermedia -- a maintenance arm and assistance -- a crosspiece serves as a link mechanism and each guide-peg step board can always maintain a floor line and parallel.

---

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
Drawing 1 is the perspective view showing one example of this invention. the part drawing 2 indicates the busy condition of the other examples of this invention to be -- the perspective view of an abbreviation. Drawing 3 is the perspective view showing the other examples of this invention.
[Description of Notations]
1 Guide-Peg Step Board
2 Maintenance Arm
3 Shoes
4 Guide-Peg Step Board Heel
5 Pars Intermedia
6 Rubber String
7 Both-Sides Edge
8 Assistance -- Crosspiece
9 Support Plate

---

(19)日本国特許庁（ＪＰ）　(12)**公開特許公報**（Ａ）　(11)特許出願公開番号
特開2002－233592
（P2002－233592A）
(43)公開日　平成14年８月20日(2002.8.20)

(51)Int.Cl.⁷	識別記号	ＦＩ	テーマコード（参考）
Ａ６３Ｂ　23/04		Ａ６３Ｂ　23/04	Ｃ Ｚ

審査請求　未請求　請求項の数４　書面　（全　３　頁）

(21)出願番号　特願2001－77273(P2001－77273)

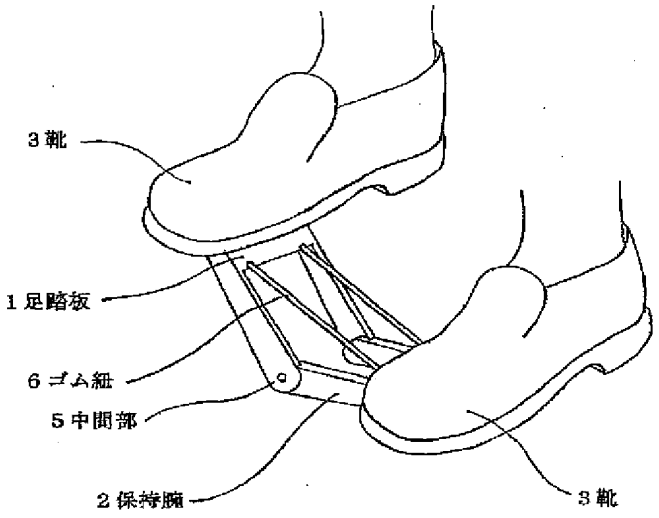
(22)出願日　平成13年２月９日(2001.2.9)

(71)出願人　392036005
草場　尊
東京都北区十条仲原１丁目７番11号

(72)発明者　草場　尊
東京都北区十条仲原１丁目７番11号

(54)【発明の名称】　航空機内用運動具

(57)【要約】
【課題】旅行中に飛行機内で長時間狭い座席に座っていた乗客が到着直後に倒れる所謂エコノミー症候群と言われる血栓症を予防しようとする運動具である。
【解決手段】２枚の足踏板面は１２０度程度の角度を保って対峙し、各足踏板は保持腕にて靴幅程度の間隔を空けて連結して航空機内用運動具とした。



【特許請求の範囲】
【請求項１】足裏もしくは靴底の一部を載せる２枚の足踏板面は１２０度程度の角度を保って対峙し、各足踏板は保持腕にて靴幅程度の間隔を空けて連結し、足踏板外端部には傾斜面を設けて成ることを特徴とする航空機内用運動具。
【請求項２】保持腕は分割して中間部で軸止し、折畳可能として成る事を特徴とする特許請求の範囲請求項１記載の航空機内用運動具。
【請求項３】各足踏板もしくは保持腕間にはゴム紐を取着し、足踏板対峙角は１８０度程度まで開くよう形成して成る事を特徴とする特許請求の範囲請求項２記載の航空機内用運動具。
【請求項４】各足踏板の両側端部を保持腕と軸止すると共に軸止部からやや内側の位置に補助桟端部とも軸止し、補助桟他端は保持腕中間部の軸に一端を軸止した支持板の軸止部からやや離れた位置に軸止して成る事を特徴とする特許請求の範囲請求項２記載の航空機内用運動具。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は、主に旅行中に飛行機内で長時間狭い座席に座っていた乗客が到着直後に肺塞栓症で倒れる所謂エコノミークラス症候群を予防する航空機内で用いる運動具に関するものである。
【０００２】
【従来の技術】航空機が飛行中には機内の湿度は２０パーセント程度と低い為に乾燥し水分が失われ易い上に、機内圧は通常の８割程度なので血液の流れが悪くなる。
さらに、狭い座席に長時間座っていた為に脚部の血行が非常に悪くなるので静脈に小血栓ができ易くなる。
また、自動車内に長時間座っていても同様である。
【０００３】
【発明が解決しようとする課題】脚部の静脈に血栓ができたまま着陸後に歩き出すと小血栓が血管内を移動し肺内で血管を塞ぎ肺塞栓症となり、呼吸困難や心肺停止を引き起こし毎年何人もの人が死亡していることが世界中で問題となっており、航空会社も機内で手足を動かすように放映したり注意を促している。
【０００４】
【課題を解決するための手段】本発明は飛行機内で長時間座っていても脚部の血流が悪くならないように、手軽に持ち運びでき航空機内で座ったままで足や脚部の筋肉の伸縮運動を簡単に行える器具を提供しようとするものである。
【０００５】
【発明の実施の形態】足裏もしくは靴底の一部を載せる２枚の足踏板（１）面は１２０度程度の角度を保って対峙し、各足踏板は保持腕（２）にて靴（３）幅程度の間隔を空け連結し足踏板外端部（４）は傾斜面を設けて成ることを特徴として航空機内用運動具とした。　材質はプラスチック製が軽量で使い易く、対峙角は１００度から１５０度の範囲内が使い易い。また、保持腕は分割して中間部（５）で軸止し、折畳可能とすると旅行中の携行がし易く、各足踏板もしくは保持腕間にはゴム紐（６）を取着し、折畳状態から足踏板を広げると１００度程度まで開き、靴で各足踏板を同時に強く押すと足踏板対峙角が１８０度程度まで開くようにしてもよく、保持腕外周部を緩やかな曲線と中間部も大きな径で形成すると足踏み時の左右の移動が抵抗無く円滑におこなえる。　さらに、足踏板に靴を載せる時一方は床とほぼ平行になり靴底とは面で接するが他方は１２０度前後上方を向く形となるので靴底と線で接する事となるが、足踏板外端部に靴底とほぼ平行となる傾斜面を設けると靴底と面で接するので靴は安定した状態で足踏板を押し下げられる。なお、図３に一例を示すが足踏板の両側端部（７）を保持腕と軸止すると共に軸止部からやや内側の位置に補助桟（８）端部とも軸止し、補助桟他端は保持腕中間部の軸に一端を軸止した支持板（９）の軸止部からやや離れた位置に軸止すると保持腕と補助桟はリンク機構となって各足踏板は常に床面と平行を保てる。
【０００６】
【発明の効果】航空機内で座席に座りシートベルトを装着すると身動きし難くなるが、本発明航空機内用運動具を足踏板が広がった状態で足元に置き、各足踏板に靴底を載せると一方の足踏板部分は航空機の床面に接し、他方の足踏板は斜め上方を向いているので靴底は足踏板外端部の床面とほぼ平行な傾斜面に載った状態になる。次に他方の靴を押し下げると床に接した足踏板は上昇し、他方の足踏板が床に接してこれを交互に繰り返すと足は足踏み状態を繰り返すこととなる。運動具を用いないと足踏みはし難いが、本発明航空機内運動具を用いると長時間リズミカルに足踏み運動ができるので、足に力を入れて押し下げる筋肉を使用し、足が上下するので筋肉の伸縮もあり歩行時と同じような運動をしていることとなり、数分ずつ何回か行えば血液をポンプで押し上げる形となり血行が促進されるので血栓はでき難くなる。また、足踏板間に強力なゴム紐もしくはバネ等を取着け、足踏板対峙角が１８０度程度まで開けるようにした運道具は両足に力を入れて足踏板を開く時に一層脚部の筋肉を使うことなり運動効果が高く、足踏板表面に滑り止めの凹凸を設けると滑り止め以外に裸足で用いた場合足裏や土踏まずへの刺激が多くなるので、疲労回復や時差ぼけ解消の効果も得られ、図３に示す機構形態を用いれば広い足踏板面が常に靴底とほぼ平行なので足踏みをし易い。なお、本運動具は航空機内に限らず、長距離バスやトラックでも航空機同様に使用でき、乗用車の後部座席でも使用できる。　さらに、例えばコンピューター操作等の机に向かって長時間作業している時でも足の運動ができるので、仕事や家事、勉強等で忙しくて運動する時

間が無い場合にも利用できる。

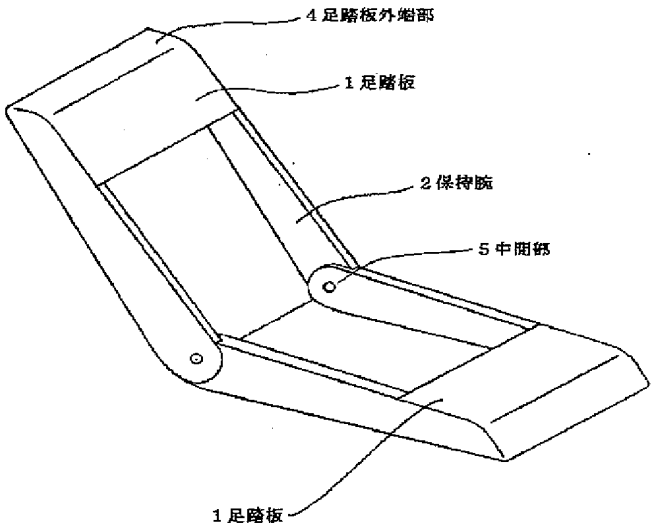
【図面の簡単な説明】

図１は本発明の一実施例を示す斜視図。図２は本発明の他実施例の使用状態を示す一部省略の斜視図。図３は本発明の他実施例を示す斜視図。

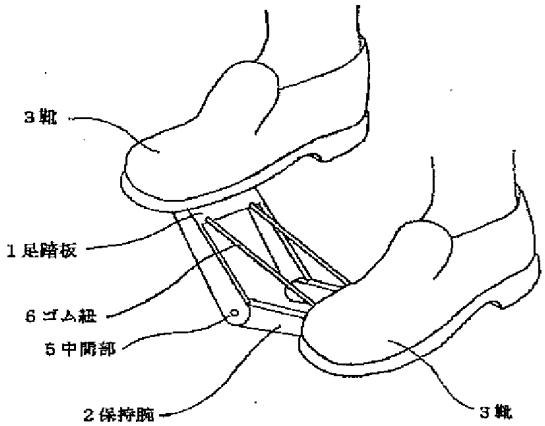
【符号の説明】

１　足踏板
２　保持腕
３　靴
４　足踏板外端部
５　中間部
６　ゴム紐
７　両側端部
８　補助桟
９　支持板

【図１】



【図２】



【図３】